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(54) FACE-DOWN MOUNTING STRUCTURE

(57)Abstract:
PROBLEM TO BE SOLVED: To prevent thermal stress concentration caused by difference in the linear expansion coefficient during mounting in a flip-chip method and restrain generation of passivation crack, by covering a region including a step part of a protection insulation film overlapping with a wiring and a terminal on an IC board excepting a part of a metallic projection with a metallic film.
SOLUTION: An Al wiring 6 and an Al pad 8 under a bump 1 (material of Au) are provided on an IC board 5 formed of Si. The Al wiring 6 and the Al pad 8 are coated with a passivation film 10 excepting a mounting position of the bump 1. A step part such as marks 2a, 2b is formed in a surface of the passivation film 10 covering an end part of the Al wiring 6 which is an uppermost layer wiring of an IC, and the parts 2a, 2b are covered with an extension part of a barrier metal (such as a lamination structure of a Ti layer and a Pd layer). As a result, it is possible to prevent local thermal stress concentration during mounting and furthermore during a reliability test in a flip-chip method, thus restraining generation of passivation crack.
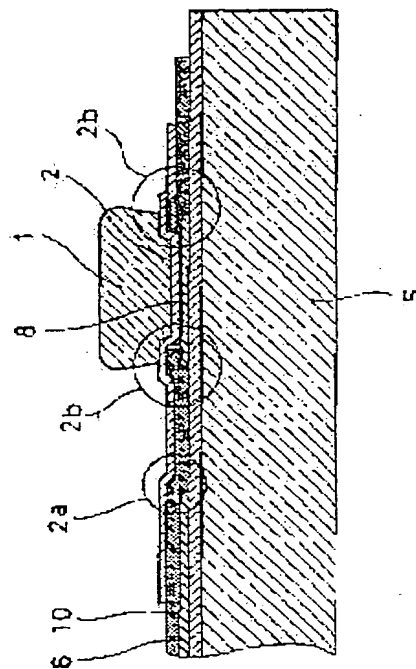
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